

Unisonic[®] 796

8 DIGIT ELECTRONIC SLIDE RULE CALCULATOR

WITH $\frac{1}{x}$ x^2 $\sqrt{}$ e^x \ln y^x \log STO \pm/\mp RCL
 \sin^{-1} \cos^{-1} \tan^{-1}
 INV \sin \cos \tan π $(($ $)$ EE

796-B

INSTRUCTION MANUAL

FEATURES AND SPECIFICATION

1. DISPLAY

- 5-digit mantissa with sign, and 2-digit exponent with sign : or 8-digit floating point with sign.
- Zero suppression.
- Minus sign.
- Overflow condition indicator.

2. FUNCTIONS

Addition, subtraction, multiplication, division, reciprocal, square root, square, power, credit balance, repeating addition and subtraction, automatic constant calculation for Multi and Div, one independent memory, bracket calculation, $\text{Pi}(\pi)$ calculation, exponent calculation, sine, cosine, cosine, tangent, arcsine, arccosine, arctangent, natural logarithm, natural antilogarithm, common logarithm, common antilogarithm,

3. DECIMAL POINT SYSTEM

Full floating decimal point.

4. CAPACITY [REDACTED]

10^{-9} through 9.9999999×10^9

5. OTHER FUNCTION [REDACTED]

Negative : Credit balance with minus sign.

Auto clear : Automatic clear at power on time.

6. POWER SOURCE [REDACTED]

Dry cells (UM-3 or AM-3) or by AC Adaptor.

7. DIMENSIONS [REDACTED]

1-2/5 inches(H) x 3-1/2 inches(W) x 6-1/10 inches(L)

8. WEIGHT [REDACTED]

9-3/5 oz. (with dry cells)

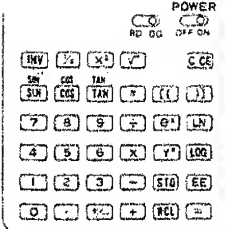
9. POWER CONSUMPTION [REDACTED]













350 mW (DC 6V)

10. ELEMENT [REDACTED]

Mos LSI complete 1 chip

KEYBOARD ORGANIZATION AND KEY DESCRIPTION

	0 - 9	Numerical entry keys.	
	.	Decimal point key.	
	+	Addition key	Used for addition.
	-	Minus key	Used for subtraction.
	x	Multiply key	Used for multiplication.
	÷	Division key	Used for division.
	C/CE	Clear and Clear entry key	Used for all clear and clear entry. Depress once : Clear entry. Depress twice : All clear.
	=	Equal key	Express results of an straight arithmetic processes.
	1/x	Reciprocal key	Used for reciprocal calculation.
	√	Square root key	Used for square root calculation.
	STO	Store key	Used for memory input with clearing of the old value.
	RCL	Recall memory key	Used for recall memory
	((Open brackets key	} Used for bracket calculation.
))	Close brackets key	
	EE	Entry of exponent value key.	

	Pi key	Used for recall of constant π .
	Sign change key.	Used for the sing of the number.
	Square key	Used for square calculation.
	Power function key	Used for power calculation.
	Natural antilogarithm function key.	
	Natural logarithm function key.	
	Common logarithm function key.	
	Inverses function key	
NOTE: Do not depress  key twice.		
		 Trigonometric function key
Secondary function key		

$$\text{SIN}^{-1} \cdot \text{COS}^{-1} \cdot \text{TAN}^{-1}$$

Inverses trigonometric function key.

 RD DG Radians, Degres Radians, Degrees switch

Used for degrees, radians select.

CALCULATION EXAMPLES

1. MIXED ADDITION, SUBTRACTION

$$1.23 + 4.56 - 7.89 = -2.1$$

$$1.23 \boxed{+} 4.56 \boxed{-} 7.89 \boxed{=} \longrightarrow -2.1$$

2. MIXED MULTIPLICATION, DIVISION

$$123 \times 456 \div 789 = 71.087452$$

$$123 \boxed{\times} 456 \boxed{\div} 789 \boxed{=} \longrightarrow 71.087452$$

3. POWER

$$2^4 = 16$$

$$2 \boxed{y^x} 4 \boxed{=} \longrightarrow 16$$

4. REPEATED CALCULATION

$$21 + 3 + 3 + 3 - 3 - 3 - 3 = 21$$

$$21 \boxed{+} 3 \boxed{=} \boxed{=} \boxed{=} \boxed{-} 3 \boxed{=} \boxed{=} \boxed{=} \longrightarrow 21$$

5. CONSTANT MUL/DIV

(1) MULTIPLICATION

$2 \times 123 = 246$
$5 \times 123 = 615$
$8 \times 123 = 984$

2	$\boxed{\times}$	123	$\boxed{=}$	\longrightarrow	246
5	$\boxed{=}$		\longrightarrow	615	
8	$\boxed{=}$		\longrightarrow	984	

(2) DIVISION

$123 \div 3 = 41$
$333 \div 3 = 111$
$999 \div 3 = 333$

123	$\boxed{\div}$	3	$\boxed{=}$	\longrightarrow	41
333	$\boxed{=}$		\longrightarrow	111	
999	$\boxed{=}$		\longrightarrow	333	

6. CHAIN OPERATION

$\frac{(3+4)6-2}{5} = 8$

3	$\boxed{+}$	4	$\boxed{\times}$	6	$\boxed{-}$	2	$\boxed{\div}$	5	$\boxed{=}$	\longrightarrow	8
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7. $((\cdot))$ KEY OPERATION

$$5 + [5 (16 + 2)] = 95$$

$$5 \boxed{+} \boxed{((} \boxed{5} \boxed{\times} \boxed{((} \boxed{16} \boxed{+} \boxed{2} \boxed{)}} \boxed{)}} \boxed{=} \longrightarrow 95$$

8. ENTRY CORRECTION

$$123 \times 123 = 15129$$

$$123 \boxed{\times} \underline{122} \boxed{C/CE} 123 \boxed{=} \longrightarrow 15129$$

↑
mis-entry

9. SQUARE ROOT

$$\sqrt{81} = 3$$

$$81 \boxed{\sqrt{}} \boxed{\sqrt{}} \longrightarrow 3$$

10. RECIPROCAL

$$\frac{1}{4} = 0.25$$

$$4 \boxed{1/x} \longrightarrow 2.5 \quad -01 \quad (2.5 \times 10^{-1} = 0.25)$$

11. $\boxed{\text{LN}}$ \cdot $\boxed{e^x}$ KEY OPERATION

$$\boxed{\text{Ln } 100 = 4.60517}$$

$$100 \boxed{\text{LN}} \longrightarrow 4.60517$$

$$\boxed{e^{4.60517} = 100}$$

$$4.60517 \boxed{e^x} \longrightarrow 100$$

12. $\boxed{\text{LOG}}$ KEY OPERATION

$$\boxed{\log_{10} 5 = 0.69897}$$

$$5 \boxed{\text{LOG}} \longrightarrow 6.9897 - 01$$

$$(6.9897 \times 10^{-1}) = 0.69897$$

13. $\boxed{\pi}$ KEY OPERATION

$$\boxed{2\pi = 6.2831852}$$

$$2 \boxed{\times} \boxed{\pi} \boxed{=} \longrightarrow 6.2831852$$

14. SQUARE

$$(2^2)^2 = 16$$

2 $\boxed{\times^2}$ $\boxed{\times^2}$ → 16

15. \boxed{EE} KEY OPERATION

$$(111 \times 10^{-4}) \times (111 \times 10^{10}) = 1.2321 \times 10^{10}$$

ENTRY	DISPLAY	COMMENTS
111	111.	
\boxed{EE}	111. 00	
$\boxed{\div}$	111. -00	
4	111. -04	111×10^{-4}
$\boxed{\times}$	1.11 -02	
111	111.	
\boxed{EE}	111. 00	
10	111. 10	111×10^{10}
$\boxed{=}$	1.2321 10	1.2321×10^{10}

16. $\boxed{\text{SIN}} \cdot \boxed{\text{SIN}^{-1}}$ KEY OPERATION

(1) $\boxed{\text{SIN } 30^\circ = 0.5}$

☐ RD ☐ DG 30 $\boxed{\text{SIN}}$ \longrightarrow 5. -01 ($5 \times 10^{-1} = 0.5$)

(2) $\boxed{\text{SIN } \frac{\pi}{6} = 0.5}$

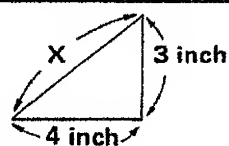
☐ RD ☐ DG $\boxed{\pi} \boxed{\div} 6 \boxed{=} \boxed{\text{SIN}}$ \longrightarrow 5. -01 ($5 \times 10^{-1} = 0.5$)

(3) $\boxed{\text{SIN}^{-1} 0.5 = 30^\circ}$

☐ RD ☐ DG 0.5 $\boxed{\text{INV}} \boxed{\text{SIN}^{-1}}$ \longrightarrow 30

ADVANCED PROBLEM SOLVING

(1)



Find the hypotenuse when two sides of a right triangle are known.

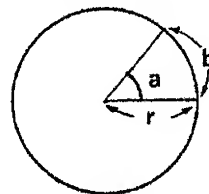
$$X^2 = 3^2 + 4^2$$

$$X = \sqrt{3^2 + 4^2}$$

3 $\boxed{\times^2}$ $\boxed{\text{STO}}$ 4 $\boxed{\times^2}$ $\boxed{+}$ $\boxed{\text{RCL}}$ $\boxed{=}$ $\boxed{\sqrt{}}$ \longrightarrow 5

Answer $x = 5$ inch

(2)



$$a = 30^\circ$$

$$r = 2.5 \text{ inch}$$

$$b = ?$$

$$b = 2 \cdot \pi \cdot r \cdot \frac{30}{360}$$

2 $\boxed{\times}$ $\boxed{\pi}$ $\boxed{\times}$ 2.5 $\boxed{\times}$ 30 $\boxed{\div}$ 360 $\boxed{=}$ \longrightarrow 1.3089969

Answer $b = 1.3089969$ inch

(3)

$$\sum_{i=0}^5 (2.5)^i = ? = 1 + 2.5 + (2.5^2) + (2.5^3) + (2.5^4) + (2.5^5)$$

$$1 + 2.5 + ((2.5^2)) + ((2.5^3)) + ((2.5^4)) + ((2.5^5)) = \longrightarrow 162.0937$$

Answer 162.0937

(4)

Find the root of $X^2 - 4X + 2 = 0$

The general formula of a quadratic is:

$$A X^2 + B X + C = 0$$

$$X = \frac{-B \pm \sqrt{B^2 - 4A \cdot C}}{2 \cdot A}$$

Solution

$$X = \frac{-(-4) \pm \sqrt{(-4)^2 - 4 \times 1 \times 2}}{2 \times 1} = \frac{4 \pm \sqrt{(-4)^2 - (4 \times 2)}}{2}$$

ENTRY	DISPLAY	MEMORY	COMMENT
4 $\frac{+}{-}$ X^2 STO	16.	16	$(-4)^2$
4 \times 2 $=$ $\frac{+}{-}$	-8.	16	
$+$ RCL $=$ $\sqrt{}$ STO	2.8284271	2.8284271	$\rightarrow \left(\frac{-(-4 \times 2)}{(-4)^2 - (4 \times 2)} \right)$
4 $+$ RCL \div 2 $=$	6.8284271	2.8284271	
	3.4142135	2.8284271	$\rightarrow \left(\frac{4 + \sqrt{(-4)^2 - (4 \times 2)}}{2} \right)$
4 $-$ RCL \div 2 $=$	1.1715729	2.8284271	
	5.8578-01	2.8284271	$\rightarrow \left(\frac{4 - \sqrt{(-4)^2 - (4 \times 2)}}{2} \right)$
	$(5.8578 \times 10^{-1} = 0.58578)$		

Answer X = 3.4142135
and X = 0.58578

Note: This STO key transfers the displayed into the memory and at the same time clear the previous memory value.

(5) **COSH 1.5 = 2.35241**

$$\cosh x = \frac{e^x + e^{-x}}{2}$$

1.5 e^x STO 1.5 $\frac{+}{-}$ e^x $+$ RCL \div 2 $=$ \rightarrow 2.35241

(6) **SIN 30° + COS 60° = 1**

RD DG 30 SIN $+$ 60 COS $=$ \rightarrow 1

ERROR AND UNDERFLOW CONDITION

ERROR CONDITION

- a) Division by zero
- b) $\sqrt{}$, where $X < 0$
- c) X^2 , where $|X| \geq 10^{50}$
- d) Sin, cos or tan, where $X > (180^\circ$ or 3.1415927 radians)
- e) Tan, where $|X| = (90^\circ$ or 1.5707963 radians)
- f) \sin^{-1} or \cos^{-1} , where $|X| > 1$
- g) \tan^{-1} , where $|X| \geq 5 \times 10^{99}$
- h) Log or Ln, where $X \leq 0$
- i) e^X , where $X \geq 230.25851$
- j) Y^X , where $Y \leq 0$ or $X \ln a \geq 230.25851$
- k) $\frac{1}{X}$, where $X = 0$
- l) Result of operation $> 9.9999999 \times 10^{99}$

UNDERFLOW CONDITION

- a) X^2 , where $|X| \leq 10^{-50}$
- b) Sin or tan, where $|X| \leq 5.7295779 \times 10^{-9}$ degrees
- c) e^X , where $X < -227.95592$
- d) Y^X , where $X \ln Y < -227.95592$
- e) $\frac{1}{X}$, where $X > 10^{99}$
- f) Result of operation $< 10^{-99}$

HOW TO CHANGE BATTERIES

Be sure the power switch is in the "off" position when changing batteries. The battery compartment is located in the rear of the machine. To expose contents, slide battery access cover toward the bottom of the calculator. Remove dysfunctioning batteries by pulling them out of their individual slots. Insert new batteries by positioning the (+) pole of each battery against the spring of its respective slot. Press the battery in place. Replace battery access cover by inserting it in the bottom-most position of compartment groove and sliding it upwards until it locks into place.

TO AVOID DAMAGE TO THE CALCULATOR, SET THE BATTERIES IN CORRECT POSITION.

OPERATING FOR AC ADAPTOR

You can operate the calculator with AC adaptor by plugging the AC adaptor plug into the AC jack located on the top of the calculator. Plug UL-Type Socket prongs into wall receptor. The calculator is now ready for use.

SERVICE CERTIFICATE

Your electronic calculator is a highly precise electronic instrument which will serve you for many years with normal care.

UNISONIC PRODUCTS are guaranteed against defects in materials or workmanship for a period of ninety (90) days from date of purchase. This guarantee applies only to the original owner registered on the card below. This card must be completed and mailed, postage paid, within ten (10) days from date of purchase. Any merchandise that has been repaired by an unauthorized party, tampered with, or abused is not covered by this guarantee.

If, within (90) days from date of purchase, you send in your calculator to us, please send us also \$5.00 to cover postage which includes cost of registered mail with return receipt requested.

If you return your calculator after (90) days from date of purchase, then kindly send us a check for \$9.90 which covers registered mail with return receipt plus handling charges.

Please be sure to include check or money order with package.

All merchandise must be returned, prepaid and fully insured, in the original packaging container or in a similarly-constructed container, via U.P.S. where possible. Enclose a letter explaining the problems, with place and date of purchase.

All defective units should be returned to

UNISONIC

Service Department

16 West 25th Street

New York, N.Y. 10010

MODEL NO. _____

DATE OF PURCHASE _____

DEALER'S NAME _____

SERIAL NO. _____



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